

## Milled Rice Distribution Survey Shows Steady Growth in U.S. Rice Consumption

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**Abstract:** Results of the 1998/99 milled rice distribution survey indicate continued growth in domestic use of rice and rising per capita consumption. Both direct food use and processed food use rose to record levels in 1998/99, with imports accounting for a larger share of domestic consumption. In contrast, brewers' use remained flat. While shipments of regular milled rice expanded in 1998/99, shipments of domestic specialty rices—parboiled, precooked, and brown rice—declined for a second consecutive year. The Pacific Coast, South Atlantic, and Middle Atlantic remain the top markets for direct food shipments. U.S. rice consumption has increased dramatically over the past two decades, although the rate of increase has slowed since the mid-1990's.

**Keywords:** Rice, per capita consumption, processed foods, beer use, food service.

### Summary

The annual milled rice distribution survey is conducted by the Food Research Associates and is funded by the USA Rice Federation. The survey reports shipments of milled rice from domestic millers and repackagers, and typically accounts for 95 percent or more of domestic rice shipments. The survey is conducted immediately after the market year ends and is available early in the next calendar year.

The 1998/99 milled rice distribution survey reported record total and per capita rice consumption in the United States. Survey results indicate that Americans consumed more than 72 million hundredweight (cwt)—including imports—of milled rice in the August 1998-July 1999 market year, up nearly 2 percent from a year earlier. Total consumption of rice in the United States has increased about 50 percent in the past decade, even though the rate of annual increase has slowed since the mid-1990's.

Per capita rice consumption was reported at 26.5 pounds, up slightly from a year earlier and about 38 percent higher than in 1988/89. Imports accounted for about 10 percent of total rice consumption in the United States. Since the early 1980's, imports have accounted for a growing share of U.S. rice consumption.

Direct food use and processed foods accounted for all of the reported growth in domestic consumption of rice, with processed foods reporting the strongest rate of growth. In

contrast, beer use remains flat. While shipments of regular milled white rice rose nearly 6 percent in 1998/99, shipments of domestic specialty rices—parboiled, precooked, brown rice, and aromatics—declined. Package mixes and pet food accounted for most of the expansion in processed food use of rice.

The Pacific region remains the largest market for direct food use shipments, followed by the South Atlantic and Middle Atlantic. Together these three regions accounted for 64 percent of total direct food use in 1998/99.

### ***Direct Food Use Rises to Record 45 Million Cwt***

U.S. rice consumption is divided into three major categories: direct food use (or table rice), processed foods, and beer. In 1998/99, direct food use—including imports—was a record 45.2 million cwt, up nearly 3 percent from a year earlier and 63 percent larger than in 1988/89. Direct food use accounted for 63 percent of total domestic use, up slightly from a year earlier and a near-record. Direct food use includes regular milled white rice and specialty rices such as brown, parboiled, precooked, and aromatic.

Shipments from U.S. mills for direct food use were reported at a record 38.1 million cwt, up more than 1 percent from a year earlier. Regular milled white rice accounted for all of the growth, shipments of domestic specialty rices declined for the second consecutive year.

At the end of the 1998/99 market year the U.S. Department of Agriculture (USDA) projected imports at 7.1 million cwt

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Table B-1--Distribution of milled rice to principle domestic outlets 1/

Year	Direct food use 2/	Direct food use (incl. imports)	Processed foods Million cwt	Beer	Total
1978/79	15.22	15.29	3.72	7.90	26.90
1980/81	18.79	18.94	4.49	8.00	31.44
1982/83	19.17	19.64	3.34	9.60	32.58
1984/85	21.20	22.32	5.44	9.67	37.43
1986/87	22.87	24.70	7.63	10.68	43.01
1988/89	25.05	27.72	8.62	11.15	47.49
1990/91	27.97	31.30	12.18	11.00	54.48
1994/95	31.51	36.61	16.13	10.71	63.45
1995/96	36.28	41.62	14.90	11.18	67.69
1996/97	35.78	42.79	14.13	10.82	67.74
1997/98	37.56	44.16	15.57	11.09	70.81
1998/99	38.10	45.22	16.15	10.70	72.06

1/ Does not include shipments to U.S. territories. 2/ Does not include imports.

Source: Direct and processed food use data from milled rice distribution surveys. For market years 1978/79 through 1990/91, survey data compiled by USDA's Economic Research Service. For market years 1994/95 through 1998/99, data compiled by the Food Research Associates for the USA Rice Federation. Beer use data from the U.S. Treasury Department. Import data from U.S. Department of Commerce. All data updated as of February 2000, when 1998/99 survey results were published.

(milled basis), which was reported in the survey. Revised data indicate that imports were 7.3 million cwt for 1998/99. Virtually all imported rice is consumed as direct food use and nearly all imports are aromatic rices, primarily Jasmine from Thailand and basmati from India and Pakistan. These specific aromatic varieties are just starting to be produced in the United States. Since the early 1980's imports have grown faster than total consumption.

Rice for direct food use is primarily distributed to consumers through grocery stores, food service outlets, and warehouse clubs. In addition, very small amounts of rice are

distributed through USDA domestic food assistance programs. Shipments to all four distribution categories were reported higher in 1998/99. Grocery stores accounted for almost 57 percent of all shipments of domestic rice for direct food use, about the same as a year earlier but down slightly from 1994/95. Food service outlets were the second largest outlet, accounting for more than 37 percent of shipments, about the same share as in 1994/95.

While accounting for only 5 percent of domestic shipments for direct food use, warehouse clubs reported the strongest growth of the three major outlets in 1998/99, growing about 3.5 percent. Since 1994/95, shipments to warehouse clubs have expanded about 40 percent, while shipments to grocery stores and food service outlets have each risen around 21 percent. Warehouse clubs' share of total direct food use sales has risen 1 percentage point since 1996/97. Shipments for USDA food assistance programs have been nearly flat since 1994/95, averaging about 325,000 cwt per year and accounting for less than 1 percent of direct food use shipments.

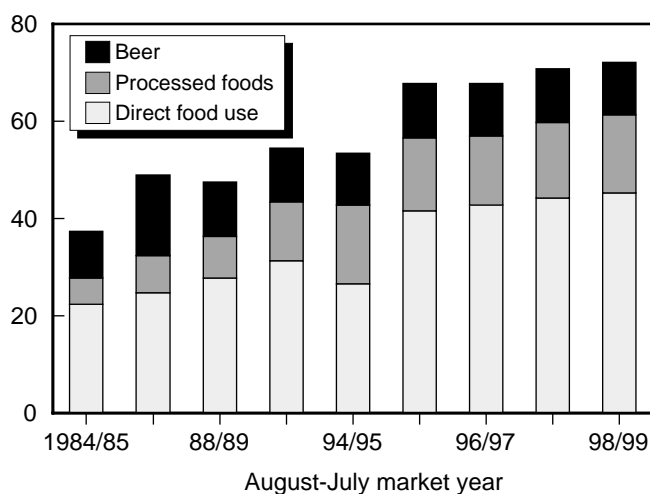
### ***Domestic Specialty Rices Continue To Decline***

According to the survey, shipments of domestic specialty rices for direct food use declined 24 percent to 4 million cwt in 1998/99, the lowest in nearly 20 years. Parboiled rice and precooked rice accounted for all of the decline. Shipments of parboiled rice dropped about a third to 2.5 million cwt, the lowest in nearly 20 years. In 1994/95, domestic shipments of parboiled rice were nearly 5 million cwt, the highest on record. Declining capacity in U.S. parboiling accounted for some of the reduction. Virtually all parboiled rice is southern long grain.

Figure B-1

### **U.S. rice consumption continues to expand**

Mill. cwt (milled basis)



Includes imports but does not include shipments to U.S. territories.

Source: Milled rice distribution survey, various issues.

Table B-2--Domestic shipments of specialty rices, 1988/89 to 1998/99 1/

Table D-2 Domestic shipments of specialty rice, 1988/89 to 1998/99 (1)										
Year	Parboiled	Precooked 2/	Brown rice	Precooked parboiled	Precooked brown	Precooked	Aromatic rice	Aromatic brown	Other 3/	Total
						parboiled brown				
Million cwt										
1988/89	4.38	0.52	0.69	0.35	0.00	0.00	0.00	0.02	0.00	5.97
1990/91	3.38	0.87	0.67	0.68	0.00	0.13	0.09	0.01	0.00	5.81
1994/95	4.95	0.24	0.57	0.65	0.01	0.11	0.06	0.03	0.05	6.66
1995/96	4.02	0.26	0.53	0.76	0.01	0.15	0.07	0.03	0.11	5.95
1996/97	4.28	0.42	0.70	0.60	0.01	0.05	0.10	0.06	0.08	6.29
1997/98	3.77	0.42	0.37	0.56	0.01	0.05	0.08	0.01	0.03	5.29
1998/99	2.50	0.29	0.67	0.36	0.02	0.03	0.09	0.05	0.01	4.02

1/ Does not include imports or shipments to U.S. territories. 2/ Includes instant rice. 3/ Includes mochi-glutinous, rice blends, sweet rice, and Arborio.

Source: U.S. Rice Distribution Patterns Annual Report, various issues.

Shipments of precooked rice dropped about 30 percent in 1999/2000 to 288,000 cwt. U.S. consumption of precooked rice has steadily declined for 20 years. Long grain accounts for nearly all precooked rice. Shipments of precooked-parboiled rice dropped more than 35 percent to 359,000 cwt. Although precooked rice is quick to prepare, it is generally considered to have a less desirable taste compared with regular rice. In 1998/99, all of the precooked rice shipped in the United States was long grain.

In contrast, shipments of brown rice for direct food use rose 80 percent in 1998/99 to 669,000 cwt, about even with 1996/97. Brown rice has the hull removed but the bran layer is still attached to the kernel. Brown rice is about evenly split between long and combined medium/short grain. Health and diet attributes, including greater nutrition, are the main factors driving demand for brown rice. Brown rice consumption may rise even more with USDA's recent release of the 2000 edition of the Dietary Guidelines, which places strong emphasis on whole grains.

Shipments of domestic aromatic rices (including aromatic brown rice) were up about 60 percent to 137,000 cwt. Shipments were still less than the 1996/97 record of 159,000

cwt. U.S. aromatic rices are nearly all grown in the South, although California is starting to grow aromatic rice, including jasmine, basmati, red rice (long grain and short grain), and black japonica.

In contrast to shipments for direct food use, shipments of specialty rice for processed foods rose 19 percent to 2.2 million cwt in 1998/99. However, shipments are only fractionally higher than levels reported in 1996/97. Package mixes and frozen dinners account for the bulk of specialty rices—mostly parboiled rice and some brown rice—used in processed foods.

### **Processed Food Use Reports Strongest Rate of Growth**

Use of rice in processed foods was reported at more than 16.1 million cwt in 1998/99, up nearly 4 percent from a year earlier. Processed food use of rice was a record in 1998/99, fractionally above the previous record in 1994/95.

Processed foods were the fastest growing category of domestic rice use in 1998/99. Processed foods that use rice include breakfast cereals, package mixes, pet foods, baby food, rice cakes, frozen dinners, soup, crackers and snacks, and candy. Processed food use of rice accounted for about 22 percent of total domestic use, up slightly from a year earlier but still below the 1994/95 record of 25 percent.

*Package mixes*, also referred to as flavored rice mixes or prepared mixes, accounted for the bulk of the increase in processed food use of rice in 1998/99. Rice use in package mixes increased about 90 percent to 2.5 million cwt. However, use remains below the record of nearly 3.3 million in 1994/95.

Use of rice in packaged mixes expanded substantially in the 1980's and early 1990's, but declined in the second half of the 1990's. Packaged mixes are easy to prepare and come in many flavors. One reason that this category has not expanded—even as demand for convenience and variety has risen—is the tremendous competition in the highly convenient food product market.

Table B-3--Domestic shipments of specialty rice by grain type, 1998/99 1/

Specialty rice type	Long	Medium	Short	Total 3/
Million cwt				
Parboiled	2.48	0.02	0.00	2.50
Precooked 2/	0.29	0.00	0.00	0.29
Brown	0.34	0.24	0.08	0.67
Precooked parboiled	0.36	0.00	0.00	0.36
Precooked brown	0.02	0.00	0.00	0.02
Precooked parboiled brown	0.03	0.00	0.00	0.03
Aromatic	0.09	0.00	0.00	0.09
Aromatic brown	0.05	0.00	0.00	0.05
Other	0.00	0.00	0.01	0.01
Total	3.67	0.26	0.09	4.02
Share of total (percent)	91.30	6.50	2.20	100

1/ Does not include imports. 2/ Includes instant rice.

3/ Includes shipments to U.S. territories

Source: U.S. Rice Distribution Patterns Annual Report, various issues.

Table B-4--Distribution of milled rice to domestic processors by product use 1/

Market year	Cereal	Package mixes 2/	Pet food	Baby food	Crackers/snacks	Rice cakes	Frozen dinners	Soup	Candy	Other 3/	Total
Million cwt											
1978/79	2.09	1.10	0.00	0.16	0.00	0.00	0.00	0.16	0.00	0.22	3.72
1980/81	2.59	1.37	0.00	0.13	0.00	0.00	0.00	0.15	0.00	0.26	4.49
1982/83	2.50	0.22	0.00	0.15	0.00	0.00	0.00	0.18	0.00	0.29	3.34
1984/85	3.58	0.57	0.00	0.32	0.00	0.00	0.00	0.24	0.00	0.27	4.97
1986/87	4.80	1.51	0.43	0.23	0.00	0.29	0.06	0.08	0.15	0.09	7.63
1988/89	3.94	1.71	1.34	0.17	0.00	0.71	0.09	0.12	0.22	0.33	8.62
1990/91	4.42	3.17	2.07	0.45	0.00	0.41	0.24	0.12	0.11	1.22	12.19
1994/95	5.93	3.27	4.51	0.28	0.46	0.44	0.29	0.16	0.21	0.58	16.13
1995/96	4.95	2.52	4.78	0.30	0.32	0.45	0.25	0.15	0.30	0.89	14.90
1996/97	5.24	1.93	4.83	0.29	0.48	0.41	0.57	0.10	0.12	0.15	14.13
1997/98	5.68	1.32	5.64	1.11	0.39	0.36	0.63	0.10	0.17	0.17	15.57
1998/99	4.92	2.51	6.07	0.57	0.42	0.32	0.68	0.05	0.27	0.33	16.15

1/ Does not include imports or shipments to U.S. territories. 2/ Includes package mixes shipped directly by mills.

3/ Includes minor products not listed separately and unspecified products.

Source: U.S. Rice Distribution Patterns Annual Report, various issues.

About 40 percent of the rice used in packaged mixes is high quality southern long grain and about 20 percent is medium grain. The bulk of the remaining rice used in package mixes is specialty rices, mostly parboiled and brown rice.

### ***Pet Food is the Largest Category of Processed Food Use of Rice***

Pet food became the largest category of processed food use of rice in 1998/99, accounting for 38 percent of total processed food use. *Pet food* reported the second largest increase in rice use among processed foods, rising 430,000 cwt to almost 6.1 million, a record.

Rice is a relatively expensive ingredient for pet food, and pet foods that contain rice are generally premium lines. In recent years pet food companies have marketed products that have ingredients similar to what humans consume, which helped to open a niche for rice in the pet food market.

There was very little use of rice in pet foods prior to the mid-1980's. However, use of rice in pet foods has steadily increased since the mid-1980's and by 1998/99 was almost 3 times the 1990/91 level. No other processed food category has shown this much growth over the past decade. Broken rice account for almost 90 percent of the rice used in pet foods. Broken rice occurs during the milling process when some whole kernels are broken. Broken rice sells at a steep discount to whole kernel rice. Pet foods have been a major market for broken rice since the early 1990's when beer manufacturers shifted away from buying mostly broken rice to buying primarily whole kernel rice.

Rice use in *cereal*, the second largest processed food category, was reported at 4.9 million cwt, down 13 percent from 1997/98 and about 1 million cwt below the 1994/95 record. Breakfast cereals containing rice are mainly the ready-to-eat types, including rice flakes, puffed rice, shredded rice, and

multi-grain cereals. Rice consumption in cereal increased substantially between 1980/81 and 1994/95 but has shown no sustained growth since then.

The recent decline in rice used for cereal is primarily the result of weaker sales of breakfast cereals overall. Cereal consumption has dropped as consumers seek even more convenient breakfasts. More and more consumers are either skipping breakfast or consuming more convenient products that can be eaten while commuting. Also, many of the new breakfast cereals do not contain any rice.

Medium grain rice makes up about 70 percent of the rice used in cereal. Common medium grain varieties used for cereal are Cal-Rose from California and Bengal from the South. Other classes of rice used to make cereal include broken (16 percent), rice flour (8 percent), and short grain (4 percent). Long grain accounts for only 1 percent of rice used in breakfast cereals.

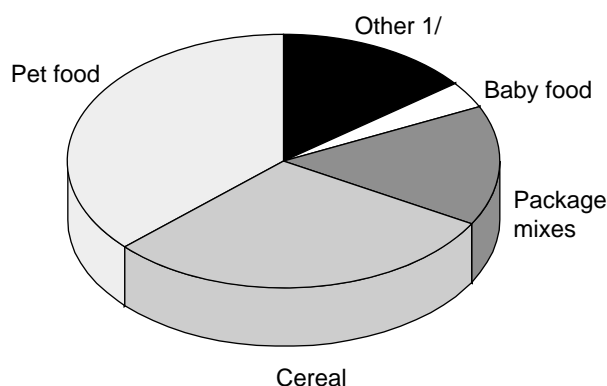
Another growing processed food use of rice are *frozen dinners*. Use of rice in frozen dinners was reported at a record 683,000 cwt in 1998/99, up almost 8 percent from a year earlier. Rice used in frozen dinners was virtually non-existent until the mid-1980's, but it has grown significantly since then. Frozen dinners use mostly specialty rices, primarily parboiled.

*Baby food* is another major category of U.S. rice consumption. Rice consumption in baby food has been expanding since the late 1980's. In 1998/99, baby foods used around 567,000 cwt of rice, virtually all of it rice flour. Although down substantially from a year earlier, it was still the second largest on record. Baby food is the largest user of rice flour, accounting for about 50 percent of total reported rice flour consumption in 1998/99. Rice-based baby foods are also an important substitute food for children who are allergic to wheat gluten.

Figure B-2

## Pet food is the largest category of processed food use of rice

Processed food use of rice totaled  
16.1 mil. cwt in 1998/99



1/ Primarily soup, candy, rice cakes, crackers, and frozen dinners.

Other processed foods that use rice include crackers/snacks, rice cakes, candy, and soup. Consumption of these products totaled almost 1.1 million cwt of rice in 1998/99. *Crackers and snacks* combined used 418,000 cwt of rice in 1998/99, up about 7 percent from a year earlier but still below the 1996/97 record. Crackers and snacks use mostly broken. Use of rice in *rice cakes*—mostly long grain—was reported at 316,000 cwt, down 12 percent from 1997/98. Rice cakes were introduced in the mid-1980's but consumption has declined substantially since the latter part of that decade.

Use of rice in *candy* was reported at 271,000 cwt, up significantly from a year earlier, but 9 percent lower than the peak in 1995/96. Most of the rice used in candy is specialty rice or broken, and the remainder (about 18 percent) is regular milled medium grain. Use of rice in soup was about 54,000 cwt in 1998/99, down 50 percent from a year earlier and one of the lowest on record. There has been no long-run growth in rice used in soup since the mid-1970's. Most soups use parboiled rice, which exhibits superior cooking qualities and increased longevity in cans. Soup category sales, like cereal, have been in decline in recent years as consumers seek more convenient and portable foods.

## Beer Use Remains Flat; Share of Domestic Use Declines

The U.S. Department of Agriculture reported 10.7 million cwt of milled rice was used in beer in 1998/99, down fractionally from a year earlier and slightly below the record levels reported in the late 1980's. The USDA uses monthly data from the U.S. Treasury Department to make annual estimates of beer use. Currently, data are available through October 1998.

The milled rice distribution survey also reports rice use in beer. The survey reports 10.4 million cwt of rice used in beer in 1998/99, up from 9.5 million reported a year earlier. However, the milled rice survey has historically under reported the amount of rice used in beer compared with data from the U.S. Treasury Department. When the survey was published, the U.S. Treasury Department reported 11.1 million cwt used in beer in 1997/98 and 10.7 million cwt in 1998/99.

In contrast to other domestic uses for rice, the amount of rice used in beer has been nearly stagnant since the late 1980's. Beer use accounted for almost 15 percent of total domestic rice consumption, down slightly from a year earlier and just one-half the record share reported in 1978/79. Brewers use both long and medium grain whole kernel rice as well as small amounts of broken.

Beer use has steadily declined as a share of total domestic use of rice since the late 1970's. Greater popularity of imported, microbrewery, and "lite" beers have accounted for the lack of expansion in beer use of rice. From the late-1960's through the mid-1970's, beer accounted for the bulk of the growth in domestic use of rice. During that period, food use was virtually stagnant.

## Growth in Rice Consumption Has Slowed Since the Mid-1990's

Total and per capita rice consumption have been increasing since the late 1970's, but the rate of increase slowed after the mid-1990's. From the late 1960's until the mid-1970's, Americans consumed about 22 million cwt of rice a year, with per capita use actually declining. However, beginning in 1978/79, total rice consumption began to increase significantly, with the rate accelerating during the 1980's.

Survey results reported total consumption more than doubled between 1978/79 and 1990/91. In fact, during the 1980's, total domestic consumption averaged a 5-percent annual growth rate. By the late 1990's, growth had slowed to less than 3 percent a year.

Growth in per capita consumption followed a similar trend. Between 1978/79 and 1994/95, total per capita rice consumption—food use plus brewers' use—more than doubled to 24.2 pounds. However, from 1994/95 to 1998/99, per capita consumption expanded slightly more than 2 percent a year. The slowdown in growth of both total and per capita rice consumption is likely due to a greater demand for foods that are already prepared and, typically, can be eaten on the run. Also, the popularity of high-protein diets has had a negative impact on the entire grain industry. Relative prices of rice and other grains may also have had an impact.

USDA's long-term baseline forecast published in February 2000 projected total rice consumption to expand a little more

than 2 percent a year for the next decade, with food use accounting for nearly all of the growth. USDA projects slow but steady growth in per capita consumption of rice over the next decade as well. Most of the expected growth in food purchases over the next decade is expected to come from products that are easy to prepare and very convenient. Rice is increasingly moving to the *center of the plate* as people turn to one-dish meals at dinnertime. While convenience will be the driver, existing trends indicate that there is growing consumer awareness and demand for different varieties of rice that offer unique colors, textures, and flavors.

### ***Pacific and South Atlantic Report Strongest Growth in Rice Consumption***

Total and per capita consumption of rice varies substantially among States and regions and depends on a variety of factors, particularly the ethnic makeup of the region and whether it contains major urban centers. Because of these factors, both total and per capita rice consumption are the highest on the Pacific, Atlantic, and Gulf Coasts.

Immigration—a major factor in increased rice consumption—offers an explanation as to why this pattern has emerged. Many of the immigrants—particularly when they first arrive—live in large cities near the coast, which has increased rice consumption in these areas. In addition, immigration alters the diets and food preferences of the broader community, which has further increased rice consumption in the coastal parts of the United States. These impacts have affected the interior of the country to a lesser degree, partly explaining the much lower per capita rice consumption in these regions.

Regional data are reported only for direct food use, and therefore the figures cited are lower than if they included all uses of rice, including processed foods and beer. The *Pacific* (California, Oregon, Washington, Hawaii, and Alaska) is the largest market for rice in the United States. The region received 9.1 million cwt of rice for direct food use in 1998/99, up from a year earlier. The region accounted for about 24 percent of total direct food use shipments. The

Pacific's share of direct food use shipments has declined slightly in recent years.

The second largest market for direct food use is the *South Atlantic* (Delaware, Maryland, Virginia, Washington, DC, West Virginia, North Carolina, South Carolina, Georgia, and Florida). More than 8 million cwt of rice was shipped to the South Atlantic in 1998/99, accounting for 21 percent of total direct food shipments. The South Atlantic's share of direct food use has increased every year since 1994/95. Reported shipments to the South Atlantic have risen about 45 percent since 1994/95, the strongest rate of growth for any region.

The *Middle Atlantic* (New York, Pennsylvania, and New Jersey) ranked third, taking more than 7.2 million cwt of rice and accounting for about 19 percent of the direct food use shipments. Both total shipments and share of direct food use have declined for the Middle Atlantic since 1996/97. The South Atlantic overtook this region as the number two market in 1997/98.

The six remaining regions account for about 36 percent of total direct food use shipments. Among these six, the *West South Central* (Texas, Arkansas, Louisiana, and Oklahoma) has shown the strongest growth. Direct food use shipments to the West South Central rose 38 percent from 1994/95 to 1998/99, reaching nearly 4.6 million cwt. The region accounted for 12 percent of total shipments that year, up from a little more than 10 percent in 1994/95. Substantial immigration from Latin America is a major factor driving growth in this region.

Although shipments to the *East South Central* (Mississippi, Alabama, Tennessee, and Kentucky) have risen since 1994/95, the region's share of total direct food use has declined about 1 percentage point to less than 6 percent. Shipments to the *West North Central* (Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri) have expanded since the mid-1990's, although the region's share of total direct food use has remained about 4 percent. The *Mountain* region (Montana, Idaho, Wyoming,

Table B-5--Milled rice shipments for direct food use by region 1/

Census region	1995/96	1996/97	1997/98	1998/99
	Million cwt			
Pacific (CA, OR, WA, HI, AK)	9.43	8.49	8.84	9.10
Middle Atlantic (NY, PA, NJ)	7.37	7.65	7.25	7.24
South Atlantic (DE, MD, VA, WV, NC, SC, GA, FL, DC)	6.64	6.74	7.82	8.04
West South Central (TX, OK, AR, LA)	3.96	4.00	4.55	4.57
East North Central (OH, IN, IL, MI, WI)	3.08	2.78	2.78	2.77
East South Central (KY, TN, AL, MS)	1.81	2.06	2.22	2.21
New England (ME, VT, NH, RI, CT)	1.96	1.79	1.72	1.77
West N. Central (MN, ND, SD, NE, IA, KS, MO)	1.31	1.49	1.53	1.54
Mountain (MT, ID, WY, NV, UT, CO, AZ, NM)	0.73	0.80	0.86	0.88
Total direct food shipments	36.28	35.80	37.56	38.10

1/ Does not include imports; includes package mixes.

Source: U.S. Rice Distribution Patterns Annual Report, various issues.

Nevada, Utah, Colorado, Arizona, and New Mexico) is the smallest market for rice in the United States. Although shipments have increased since 1994/95, the region still accounts for only about 2 percent of direct food use shipments.

In contrast, shipments to the *East North Central* (Ohio, Indiana, Illinois, Michigan, and Wisconsin) have declined slightly since 1995/96, dropping to 2.8 million in 1998/99. Shipments to the region have generally declined since 1995/96. The region's share of direct food use has declined from almost 9 percent in 1995/96 to 7 percent in 1998/99. Shipments to *New England* have declined since 1995/96 as well. New England accounted for about 4.6 percent of total direct food use in 1998/99, down from more than 5 percent in 1995/96.

Per capita consumption is also the highest in coastal areas. The Pacific region had the largest per capita consumption of rice for direct food use, nearly 21 pounds. Per capita consumption was almost 19 pounds in the Middle Atlantic, more than 16 pounds in the South Atlantic, and about 15 pounds in the West South Central. Per capita consumption in the East South Central region and New England were over 13 pounds.

Per capita consumption is much lower in the interior of the United States. In the West North Central region, per capita consumption was reported at just over 8 pounds and just over 6 pounds in the East North Central. The lowest reported level of per capita consumption was 5.16 pounds in the Mountain States.